

CLAIM AMENDMENTS:

Please amend Claim 1 as follows:.

1. (Currently amended) An ink jet printing apparatus capable of performing a preliminary ejecting operation that does not contribute to printing, said apparatus comprising:

a print head having an ejecting portion and having a driver for causing an amount of ink to be ejected through said ejecting portion, wherein during printing an amount of ink passing through said ejecting portion, per unit of time, varies depending on the length of time during which printing is not executed, and

wherein one or two ejections are performed through said ejecting portion in one preliminary ejecting operation.

2. (Cancelled)

3. (Previously Presented) The ink jet printing apparatus according to claim 1 wherein said preliminary ejecting operation is performed when said amount of ink passing through said ejecting portion is decreased below a normal value.

4. (Previously Presented) The ink jet printing apparatus according to claim 1 3 wherein said preliminary ejecting operation is performed between the time when said flow of ink passing through said ejecting portion starts to decrease below said normal value and the time when said flow of ink recovers to said normal value.

5. (Original) The ink jet printing apparatus according to claim 1 wherein said preliminary ejecting operation is performed on a print medium.

6. (Original) The ink jet printing apparatus according to claim 5 wherein said preliminary ejecting operation is performed on said print medium only if dots formed on said print medium may be unnoticeable compared to a printed image, and wherein said preliminary ejecting operation is performed on an object other than said print medium if dots may be noticeable.

7. (Original) The ink jet printing apparatus according to claim 5 wherein said preliminary ejecting operation is performed on an object other than said print medium if said amount of ink decreases below said normal value before said print medium reaches a printed position relative to said print head.

8. (Previously Presented) The ink jet printing apparatus according to claim 1 wherein said preliminary ejecting operation is performed when a predetermined time has elapsed after a last ejection, said predetermined time including the time during which said flow of ink passing through said ejecting portion is decreased significantly.

9. (Original) The ink jet printing apparatus according to claim 8 wherein said predetermined time is determined depending on a temperature condition and a humidity condition of said printing apparatus.

10. (Previously Presented) The ink jet printing apparatus according to claim 8 wherein said print head has a plurality of ejecting portions, and wherein said predetermined time is determined for each of said ejecting portions.

11. (Original) The ink jet printing apparatus according to claim 10 wherein said predetermined time for each of said ejecting portions is corrected using dithering, error diffusions, or random numbers so that a dot pattern formed during said preliminary ejecting operation for said plurality of ejecting portions is unnoticeable compared to a printed image.

12. (Previously Presented) The ink jet printing apparatus according to claim 8 further comprising:

a table used to determine said predetermined time and ejecting numbers for said preliminary ejecting operation, and

a control device for controlling said predetermined ejecting operation, said control device using said table to perform said predetermined ejecting operation.

13. (Original) The ink jet printing apparatus according to claim 1 wherein said print head includes an electrothermal converting element, said print head ejecting ink using thermal energy generated by said electrothermal converting element.

14. (Original) The ink jet printing apparatus according to claim 1 wherein said print head includes a piezoelectric element, said print head ejecting ink using mechanical energy generated by said piezoelectric element.

15. (Previously Presented) An ink jet printing apparatus capable of executing a printing process using ink containing a pigment as a color material and performing a preliminary ejecting operation that does not contribute to printing, said apparatus comprising:

a print head having an ejecting portion and having a driver for driving an amount of ink through said ejecting portion during said preliminary ejecting operation, wherein during printing an optical density obtained from a pigment concentration of ink ejected through said ejecting portion varies depending on the time during which printing is not executed, and wherein one or two ejections are performed during one preliminary ejecting operation.

16. (Cancelled)

17. (Previously Presented) The ink jet printing apparatus according to claim 15 wherein said preliminary ejecting operation is performed when said optical density is decreased below a normal value.

18. (Previously Presented) The ink jet printing apparatus according to claim 17 wherein said preliminary ejecting operation is performed between the time when

said optical density obtained from said pigment concentration of ink passing through said ejecting portion starts to decrease below said normal value and the time when said optical density of ink recovers to said normal value.

19. (Original) The ink jet printing apparatus according to claim 15 wherein said preliminary ejecting operation is performed on a print medium.

20. (Original) The ink jet printing apparatus according to claim 19 wherein said preliminary ejecting operation is performed on said print medium only if dots formed on said print medium may be unnoticeable compared to a printed image, and wherein said preliminary ejecting operation is performed on an object other than said print medium if dots may be noticeable.

21. (Original) The ink jet printing apparatus according to claim 19 wherein said preliminary ejecting operation is performed on an object other than said print medium if said amount of ink decreases below said normal value before said print medium reaches a printed position relative to said print head.

22. (Previously Presented) The ink jet printing apparatus according to claim 15 wherein said preliminary ejecting operation is performed when a predetermined time has elapsed after a last ejection, said predetermined time including the time during which said optical density obtained from said concentration of ink passing through said ejecting portion is decreased significantly.

23. (Original) The ink jet printing apparatus according to claim 22 wherein said predetermined time is determined depending on a temperature condition and a humidity condition of said printing apparatus.

24. (Previously Presented) The ink jet printing apparatus according to claim 22 wherein said print head has a plurality of ejecting portion, and wherein said predetermined time is determined for each of said ejecting portions.

25. (Previously Presented) The ink jet printing apparatus according to claim 24 wherein said predetermined time for each of said ejecting portions is corrected using dithering, error diffusions, or random numbers so that a dot pattern formed during said preliminary ejecting operation for said plurality of nozzles ejecting portions is unnoticeable compared to a printed image.

26. (Previously Presented) The ink jet printing apparatus according to claim 22 further comprising:

a table used to determined said predetermined time and ejecting numbers for said preliminary ejecting operation, and

a control device for controlling said predetermined ejecting operation, said control device using said table to perform said predetermined ejecting operation.

27. (Original) The ink jet printing apparatus according to claim 15 wherein said print head includes an electrothermal converting element, said print head ejecting ink using thermal energy generated by said electrothermal converting element.

28. (Original) The ink jet printing apparatus according to claim 15 wherein said print head includes a piezoelectric element, said print head ejecting ink using mechanical energy generated by said piezoelectric element.

29. (Previously Presented) A preliminary ejecting method for an ink jet printing apparatus comprising a print head having an ejecting portion, said apparatus being capable of performing a preliminary ejecting operation that does not contribute to printing, said method comprising the steps of:

executing printing wherein an amount of ink passing through said ejecting portion varies depending on a time period during which printing is not executed, and executing one or two ejections in one preliminary ejecting operation.

30. (Cancelled)

31. (Previously Presented) The preliminary ejecting method according to claim 29 wherein said one or two ejections are performed when said amount of ink passing through said ejecting portion is decreased below a normal value.

32. (Previously Presented) The preliminary ejecting method according to claim 29 wherein said preliminary ejecting operation is performed between the time when a flow of ink passing through said ejecting portion starts to decrease below said normal value and the time when said flow of ink recovers to said normal value.

33. (Original) The preliminary ejecting method according to claim 29 wherein said preliminary ejecting operation is performed on a print medium.

34. (Original) The preliminary ejecting method according to claim 33 wherein said preliminary ejecting operation is performed on said print medium only if dots formed on said print medium may be unnoticeable compared to a printed image, and wherein said preliminary ejecting operation is performed on an object other than said print medium if dots may be noticeable.

35. (Original) The preliminary ejecting method according to claim 33 wherein said preliminary ejecting operation is performed on an object other than said print medium if said amount of ink decreases below said normal value before said print medium reaches a printed position relative to said print head.

36. (Previously Presented) The preliminary ejecting method according to claim 29 wherein said preliminary ejecting operation is performed when a predetermined time has elapsed after a last ejection, said predetermined time including the time during which the flow of ink passing through said ejecting portion is decreased significantly.



37. (Original) The preliminary ejecting method according to claim 36 wherein said predetermined time is determined depending on a temperature condition and a humidity condition of said printing apparatus.

38. (Previously Presented) The preliminary ejecting method according to claim 36 wherein said print head has a plurality of ejecting portions, and wherein said predetermined time is determined for each of said ejecting portions.

39. (Original) The preliminary ejecting method according to claim 38 wherein said predetermined time for each of said ejecting portions is corrected using dithering, error diffusions, or random numbers so that a dot pattern formed during said preliminary ejecting operation for said plurality of ejecting portions is unnoticeable compared to a printed image.

40. (Cancelled).

41. (Cancelled).

42. (Previously Presented) A preliminary ejecting method for an ink jet printing apparatus comprising a print head having an ejecting portion, said apparatus being capable of executing a printing process using ink containing a pigment as a color material, and performing a preliminary ejecting operation that does not contribute to printing, said method comprising the steps of:

executing printing wherein an optical density obtained from a pigment concentration of ink passing through said ejecting portion varies depending on a time period during which printing is not executed, and executing one or two ejections in one preliminary ejecting operation.

43. (Cancelled)

44. (Previously Presented) The preliminary ejecting method according to claim 42 wherein said one or two ejections are performed when said optical density obtained from said pigment concentration of ink is decreased below a normal value.

45. (Previously Presented) The preliminary ejecting method according to claim 42 wherein said one or two ejections of said preliminary ejecting operation are performed between the time when said optical density obtained from said pigment concentration of ink passing through said nozzle ejecting portion starts to decrease below said normal value and the time when said optical density recovers to said normal value.

46. (Original) The preliminary ejecting method according to claim 42 wherein said preliminary ejecting operation is performed on a print medium.

47. (Original) The preliminary ejecting method according to claim 46 wherein said preliminary ejecting operation is performed on said print medium only if dots formed on said print medium may be unnoticeable compared to a printed image, and

wherein said preliminary ejecting operation is performed on an object other than said print medium if dots may be noticeable.

48. (Original) The preliminary ejecting method according to claim 46 wherein said preliminary ejecting operation is performed on an object other than said print medium if said amount of ink decreases below said normal value before said print medium reaches a printed position relative to said print head.

49. (Previously Presented) The preliminary ejecting method according to claim 42 wherein said preliminary ejecting operation is performed when a predetermined time has elapsed after a last ejection, said predetermined time including the time during which said optical density obtained from said concentration of ink passing through said ejecting portion is decreased significantly.

50. (Original) The preliminary ejecting method according to claim 49 wherein said predetermined time is determined depending on a temperature condition and a humidity condition of said printing apparatus.

51. (Previously Presented) The preliminary ejecting method according to claim 49 wherein said print head has a plurality of ejecting portions, and wherein said predetermined time is determined for each of said ejecting portions.

52. (Previously Presented) The preliminary ejecting method according to claim 51 wherein said predetermined time for each of said ejecting portions is corrected using dithering, error diffusions, or random numbers so that a dot pattern formed during said preliminary ejecting operation for said plurality of ejecting portions is unnoticeable compared to a printed image.

53. (Cancelled)

54. (Cancelled)